CLAIMS

What is claimed is:

1. A method for delivering Virtual Reference Station (VRS) data derived by a VRS network processor at a VRS control station for a designated location to a mobile position determination unit with a terrestrial communications link, said method comprising:

creating a data message comprising pseudorange data derived for said designated location and pseudorange corrections for a designated region surrounding said designated location;

sending said data message via a cellular telephone connection between said VRS control station and a base station located in the designated region surrounding said designated location;

transmitting said data message from said base station to a mobile position determination unit using a radio transmitter.

2. The method as recited in Claim 1 wherein said VRS control center receives a request for said Virtual Reference Station data and further comprising:

deriving the pseudorange data and the pseudorange corrections in response to receiving said request.

3. The method as recited in Claim 2 further comprising:

receiving said request from said base station.

4. The method as recited in Claim 3 further comprising:

initiating said request in response to receiving a message from said mobile position determination unit.

5. The method as recited in Claim 2 further comprising:

receiving said request from said mobile position determination unit;

establishing said cellular telephone connection with said base station; and

requesting a position fix of said designated location.

6. The method as recited in Claim 1 further comprising:

utilizing a global positioning system (GPS) receiver to determine a position fix of said designated location.

7. The method as recited in Claim 6 wherein said GPS receiver is disposed in said mobile position determination unit and wherein said method further comprises:

locating said mobile position determination unit proximate to said base station; and

utilizing said mobile position determination unit to determine said position fix.

8. The method as recited in Claim 6 wherein said base station comprises a real-time kinematics (RTK) base station and wherein said method further comprises:

communicatively coupling said radio transmitter with a cellular communications device.

9. The method as recited in Claim 8 wherein said radio transmitter comprises a Bluetooth communications device, and wherein said method further comprises:

sending said data message to said mobile position determination unit using said Bluetooth communications device.

10. The method as recited in Claim 1 wherein said transmitting comprises selecting a frequency from a group of frequency ranges consisting of 150 MHz - 170 MHz and 450 MHz - 470 MHz.

11. A system for delivering Virtual Reference Station (VRS) data comprising:

a VRS control center for creating a data message comprising pseudorange data derived for a designated location and pseudorange corrections for a designated region surrounding said designated location ;

a base station located in said designated region surrounding said designated location, said base station for receiving said data message from

said VRS control center via a cellular telephone connection and for transmitting said data message using a radio transmitter; and

a mobile position determination unit for receiving said data message from said base station.

12. The system of Claim 11, wherein said VRS control center derives the pseudorange data and the pseudorange corrections in response to a request for VRS data.

13. The system of Claim 12 wherein said base station initiates said request.

14. The system of Claim 13 wherein said base station initiates said request in response to a message from said mobile position determination unit.

15. The system of Claim 12 wherein VRS control center receives said request from said mobile position determination unit and establishes said cellular telephone connection with said base station to request a position fix of said designated location.

16. The system of Claim 11 further comprising:

a Global Positioning System (GPS) receiver for determining a position fix of said designated location.

17. The system of Claim 16 wherein said GPS receiver is disposed in said position determination unit.

18. The system of Claim 16 wherein said base station is a real-time kinematics (RTK) base station and wherein said radio transmitter is communicatively coupled with a cellular telephone device.

19. The system of Claim 18 wherein said radio transmitter comprises a Bluetooth communications device.

20. The system of Claim 11 wherein said radio transmitter transmits said data message at a frequency selected from a group of frequency ranges consisting of 150 MHz - 170 MHz and 450 MHz - 470 MHz.

21. A method for delivering Virtual Reference Station (VRS) data comprising:

collecting data from a plurality of reference stations to derive pseudorange data for a designated location and to derive pseudorange corrections for a designated region surrounding said designated location;

sending a data message comprising the pseudorange data and the pseudorange corrections to a base station via a cellular telephone network, and wherein said base station is located in said designated region surrounding said designated location; and

transmitting said data message from said base station to a mobile position determination unit located in said designated region surrounding said designated location using a radio transmitter.

22. The method as recited in Claim 21 wherein said VRS control center receives a request for said Virtual Reference Station data and further comprising:

deriving said pseudorange data and said pseudorange corrections in response to receiving said request.

23. The method as recited in Claim 22 further comprising:

receiving said request from said base station.

24. The method as recited in Claim 23 further comprising:

initiating said request in response to receiving a message from said mobile position determination unit.

25. The method as recited in Claim 22 further comprising:

receiving said request from said mobile position determination unit;

establishing said cellular telephone connection with said base station; and

requesting a position fix of said designated location.

26. The method as recited in Claim 21 further comprising:

utilizing a global positioning system (GPS) receiver to determine a position fix of said designated location.

27. The method as recited in Claim 26 wherein said GPS receiver is disposed in said mobile position determination unit and wherein said method further comprises:

locating said mobile position determination unit proximate to said base station; and

utilizing said mobile position determination unit to determine said position fix.

28. The method as recited in Claim 26 wherein said base station comprises a real-time kinematics (RTK) base station and wherein said method further comprises:

communicatively coupling said radio transmitter with a cellular communications device.

29. The method as recited in Claim 28 wherein said radio transmitter comprises a Bluetooth communications device, and wherein said method further comprises:

sending said data message to said mobile position determination unit using said Bluetooth communications device.

30. The method as recited in Claim 21 wherein said transmitting comprises selecting a frequency from a group of frequency ranges consisting of 150 MHz - 170 MHz and 450 MHz - 470 MHz.